

Claims

1. A trailer (1) for towing after a towing vehicle, said trailer (1) comprising:

5 a) a frame (3) configured for carrying a load and having:

10 i) a front end with a coupling (5) configured for connecting the trailer (1) to the towing vehicle and allowing that the trailer (1) and the towing vehicle are able to assume mutually angular positions during turning about a turning point O; and

ii) a rear end;

15 b) a separate wheel frame (8) that is connected to the frame (3) by means of connecting means (10) that allow a relative turning of the frame (3) in relation to the wheel frame (8) during said turning about a turning point (O), said wheel frame (8) comprising oppositely arranged wheels (4) that support the trailer during the towing and that are arranged at a distance from each other close to a respective longitudinally extending side of the frame (3);

20

and

c) actuator means (15) for producing said relative turning of the frame (3);

25 characterised in

30 - that the connecting means (10) also allow a controlled transversal movement of the frame (3) in relation to the wheel frame (8) in a direction towards or away from said turning point (O) simultaneously with said relative turning of the frame (3); and

- that the trailer (1) comprises actuator means (15) for producing said transversal movement of the frame (3).

2. A trailer according to claim 1, **characterised in** that the wheels (4) are  
5 arranged at the rear end of the trailer (1) opposite the coupling (5).

3. A trailer according to claim 1 or 2, **characterised in** that the wheel frame  
(8) is arranged behind the rear end of the frame (3) in order to thus constitute  
the rear end of the trailer (1).

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4. A trailer according to any one of the preceding claims, **characterised in**  
that the wheel frame (8) carries an agricultural implement, in particular a fold  
boom sprayer (20).

15 5. A trailer according to any one of the preceding claims, **characterised in**  
that the load is a liquid container.

6. A trailer according to claim 5, **characterised in** that the container extends  
until or beyond the rear end of the frame (3); and that the wheels (4) are  
20 arranged at the rear end of the trailer (1) opposite the coupling (5).

7. A trailer according to any one of the preceding claims, **characterised in**  
that said wheels (4) are also arranged for turning about a vertical or  
essentially vertical axis in relation to the wheel frame (8); and that actuator  
25 means (15'') are coupled to the wheel frame (8) to produce this turning.

8. A trailer according to any one of the preceding claims, **characterised in**  
that the connecting means (10) are constituted of at least two arms (10', 10'')  
that are pivotally connected to the frame (3) and the wheel frame (8),  
30 respectively, and that constitute a trapezoidal mechanism for controlling the

movement of the frame (3) along a curve track in relation to the wheel frame (8).

- 5 9. A trailer according to any one of the preceding claims 1-7, **characterised in** that the connecting means (10) comprise a journaling for the wheel frame (8) with slide steering for controlling the movement of the frame (3) along a curve line in relation to the wheel frame (8).
- 10 10. A trailer according to any one of the preceding claims, **characterised in** a control unit with a memory that produces, via the actuator means (15), a predetermined fixed setting of the frame (3) in relation to the wheel frame (8) in correspondence with the angle position between the towing vehicle and the wheel frame (8).
- 15 11. A trailer according to any one of the preceding claims, **characterised in** that the actuator means (15) are connected to the frame (3), to the wheel frame (8) and/or to the connecting means (10).
- 20 12. A system comprising a towing vehicle and a trailer (1) according to any one of the preceding claims 1-11, **characterised in** a control unit with a memory that produces, via the actuator means (15), a predetermined fixed setting of the frame (3) in relation to the wheel frame (8) in correspondence with the angle position between the towing vehicle and the wheel frame (8).
- 25 13. A system according to claim 12, **characterised in** that the mutual distances transversal to the direction of driving between the wheels of the towing vehicle and between the wheels (4) of the trailer (1) are essentially identical.
- 30 14. A system according to claim 12 or 13, **characterised in** that the control unit is configured for ensuring that at least one set of wheels on the towing

vehicle and the wheels (4) of the trailer (1) move(s) along the same curve line during turning about a turning point O.

15 15. A method of steering a trailer (1) around a turning point (O), said trailer being towed by a towing vehicle, wherein the trailer (1) comprises:

a) a frame (3) configured for carrying a load and having:

10 i) a front end with a coupling (5) configured for connecting the trailer (1) to the towing vehicle and allowing that the trailer (1) and the towing vehicle are able to assume mutually angular positions during turning about a turning point O; and

ii) a rear end;

15 b) a separate wheel frame (8) that is connected to the frame (3) by means of connecting means (10) that allow a relative turning of the frame (3) in relation to the wheel frame (8) during the steering, said wheel frame (8) comprising oppositely arranged wheels (4) that support the trailer (1) during the towing and that are arranged at a distance from each other close to a respective  
20 longitudinally extending side of the frame (3);

and

c) actuator means (15) for producing said relative turning of the frame (3);

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**characterised in**

that, by means of actuator means (15), a transversal movement of the frame (3) is produced in relation to the wheel frame (8) in a direction towards or  
30 away from said turning point (O) simultaneously with a relative turning of the frame (3) in relation to the wheel frame (8).